



EVE Modelling Products and Research

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What did we promise in the proposal?

■ EUV Irradiance Modelling

□ NRLEUV Improvements (Warren, Lean, Mariska)

- New and improved DEMs using AIA and UIS (n/a) calibrated by EVE
- Updated line lists (CHIANTI)

□ SOLAR2000 Improvements (Tobiska, Viereck)

- Improved calibration using EVE irradiance values
- Updated proxy dependencies using EVE data
- Operational use of EVE data

□ Irradiance Model Products (All)

- High resolution (0.01 nm), non-flaring EUV spectra, estimated independently of the directly measured irradiances on time scales of hours to years
- EUV spectrum evolution during flares, based on the physical properties of the flare plasma
- Relations of the EUV spectrum to surface magnetic fields and flux transport
- Predictions of EUV spectra on time scales of active region evolution and rotation (days) time from HMI farside images
- Predictions of EUV spectra during future solar cycles, from associations with predicted 10.7 cm fluxes and sunspot numbers
- Scenarios for long-term historical EUV irradiance variations associated with historical proxies, and in the context of solar dynamo flux production

What else did we promise in the proposal?

■ **Terrestrial Response Modelling**

□ **TDIM, CTIM, CTIP, GAIM (Sojka, Fuller-Rowell)**

- Quantify sensitivity of ionosphere to EUV spectral variability
 - determine wavelengths of importance
 - determine timescales
- Work towards operational use of EVE data or EVE-based models

□ **Atmospheric Model Products (Bailey, Eparvier)**

- Photoionization rates based on EVE irradiances
- Photoelectron fluxes based on EVE irradiances
- From GLOW, AURIC, other models?
- On “appropriate” spatial and temporal grids